



Electro-Voice®
a gulton company

Model 1776B Cardioid Electret Condenser Microphone

SPECIFICATIONS

Generating Element:
Electret condenser

Frequency Response (see Figure 3):
50 – 20,000 Hz

Polar Pattern (see Figure 4):
Cardioid

Impedance:
150 ohms balanced

Output Level:
–55 dB
(0 dB = 1 mW/10 microbar)

EIA Sensitivity:
–148 dB

Dynamic Range:
100 dB

Equivalent Noise Level:
30 dB SPL, A weighted
(0 dB = .0002 dynes/sq. cm)

Power Supply:
1.5-volt internal battery
(not included)

Battery Selection Guide, 523
1.5 Volt Alkaline Cell P# 20554
approx. life 5000 hours:
Eveready E91
Mallory MN1500

1.5 Volt Carbon Zinc Cell
approx. life 3000 hours:
Eveready 915
Mallory M15F

Switch:
On-off (battery and audio)

Case:
Die cast zinc & aluminum

Finish:
Non-reflecting gray

Pop Filter:
Built-in Acoustifoam™ filter

Dimensions:
190.5 mm long (7.50 in.)
25.4 mm (1.00 in.) shank dia.
50.8 mm (2.00 in.) maximum dia.

Weight:
343 grams (12 oz) – with battery
but not including cable

Cable:
4.6 m (15 feet), two-conductor,
shielded with Switchcraft A3F
connector at microphone end

**LC FOLLOWING MODEL
NUMBER INDICATES MICRO-
PHONE LESS CABLE**

Accessory Furnished:
301 stand adapter

Optional Accessories:
376 grey windscreen
379 colored windscreens
380 10 dB attenuator
458 simulated leather zippered
pouch
502C matching transformer,
Lo to Hi-Z inline
502CP matching transformer,
Lo to Hi-Z w/plug
PLC–25X 25 ft cable with A3F &
A3M connectors
PLC-25P 25 ft cable with A3F &
1/4 in. phone plug connectors
PLC-25T 25 ft cable terminated with
with A3F connector at one end
and unterminated at the other end

DESCRIPTION & APPLICATIONS

The Electro-Voice 1776B is a Single-D electret condenser cardioid microphone designed for the professional vocalist. The unusually extended, shaped high-frequency response provides a natural, transparent sound quality not available in the usual vocal microphones (see Figure 3). The Single-D design provides the up-close bass boost (proximity effect) preferred by many entertainers. Unusually uniform directional characteristics over the entire frequency range (see Figures 3 and 4) provide high feedback resistance when working close to sound reinforcement speakers and monitors. A built-in Acoustifoam™ blast filter enables close talking or singing without worry of "P-popping" or other excessive breath and sibilant noise. The very low mass of the generating element acts as an effective shock mount which keeps handling noise to a minimum. The rugged construction of the 1776B makes it unique among other condenser microphones. The case is constructed of rugged diecast zinc and the battery compartment sleeve is made of aluminum. The Memraflex grille screen resists deformation.

POWERING THE 1776B

Unlike normal condenser microphones, the electret condenser does not need a polarizing voltage because a permanent charge is captured in the diaphragm material. However, a small voltage with low current drain is necessary to power

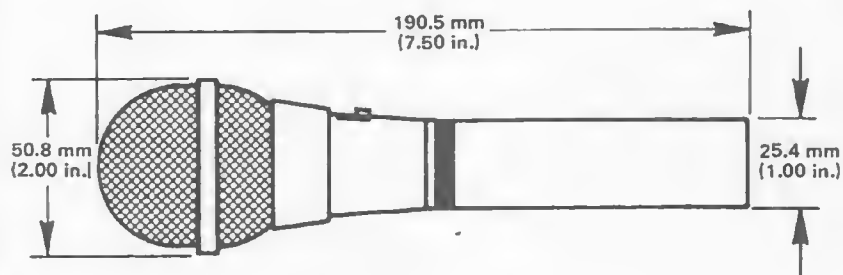


FIGURE 1 – Dimensions

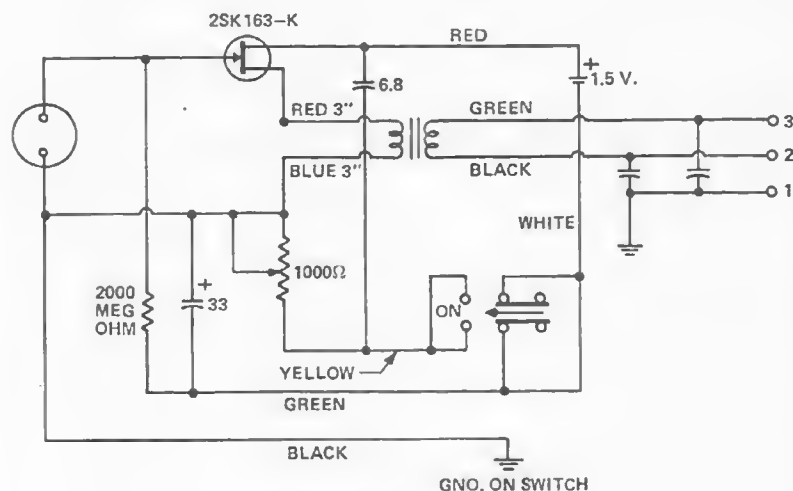


FIGURE 2 – Wiring Diagram

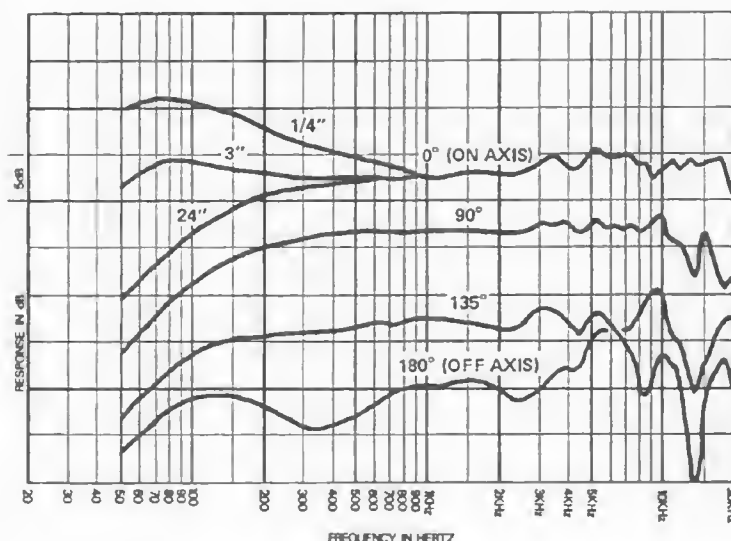


FIGURE 3 – Frequency Response

the FET impedance converter which must be used to lower the extremely high impedance of the electret head.

The 1776B features a newly designed impedance converter circuit specially developed to permit optimum performance from an internal battery of the commonly available 1.5 volt, AA size. The low current drain permits a projected useful life for a fresh alkaline cell to be in excess of six months of continuous operation. Battery life will of course be greatly extended by the simple expedient of turning the microphone off when not in use. If this precaution is observed a battery life well in excess of a year should be realized. As a battery approaches the end of its service life, a gradual but noticeable reduction in microphone output level occurs, allowing replacement of the battery without a program interruption.

Access to the battery compartment is gained by unscrewing and pulling away the sleeve shown in Figure 5, exposing the battery clips. A 1.5-volt battery may be inserted, being sure to follow the polarization (plus and minus) label. Note that the battery lies on top of the black ribbon, which then serves as an aid in the later removal of the discharged battery. The easily obtainable 1.5-volt AA-size battery will produce wide dynamic range and output level (see "Specifications" section). Specific batteries and battery life figures are also shown in the "Specifications" section. In general, alkaline batteries are recommended because of much greater shelf life and less likelihood of leakage. However, with regular usage, a fresh carbon-zinc battery will give satisfactory service life due to the low current drain of the 1776B.

INPUT REQUIREMENTS AND CONNECTIONS

The 1776B's 150-ohm balanced output is appropriate for the typical balanced input designed for low-impedance microphones. Usually, such inputs require a Switchcraft A3M-type three-pin audio connector, as shown in Figure 6.

The 1776B's output level is up to 6 dB higher than the typical low-impedance dynamic microphone. This higher-than-usual output level may overload some low-impedance inputs when the microphone is driven with very high sound pressure levels. Evidence of such overload is a rough, raspy sound

quality — caused by clipping in the first mixer stage — that is not affected by the mixer's volume control. The optional 380 10 dB inline attenuator reduces microphone output just ahead of the mixer input, thus removing the cause of the input overload.

The higher-than-usual output level of the 1776B also makes it appropriate for most medium-impedance and some high-impedance inputs, without the use of a matching transformer. Most medium- and high-impedance inputs are unbalanced, requiring the 1/4 inch phone plug connector shown in Figure 6.

USING THE VARIABLE LOW-FREQUENCY RESPONSE (PROXIMITY EFFECT)

The 1776B's low-frequency response varies with the distance from the sound source to the microphone as shown in Figure 3. Maximum bass response is produced in close-up use with the microphone 1/4-inch from the sound source. Normal bass response is experienced at distances greater than 24 inches.

Useful special effects can be created by an imaginative application of the 1776B's proximity effect:

1. By working closer to the microphone, the human voice will sound more robust, although intelligibility may be adversely affected.
2. Working close to the 1776B provides a reduced tendency to PA system feedback, over and above that provided by the cardioid directional characteristic and close working-distance alone. When close-talked, the substantial bass boost provides an increase in overall microphone output level. The mixer gain may be proportionately reduced, resulting in a reduction of the system's sensitivity to feedback caused by sound entering the microphone from the distant loudspeakers.
3. For musical instrument pickup, the variable bass response can be utilized to achieve a "clean" bass pickup at a distance of 24 inches or more. By moving the 1776B to a few inches from the instrument, bass will be increased.

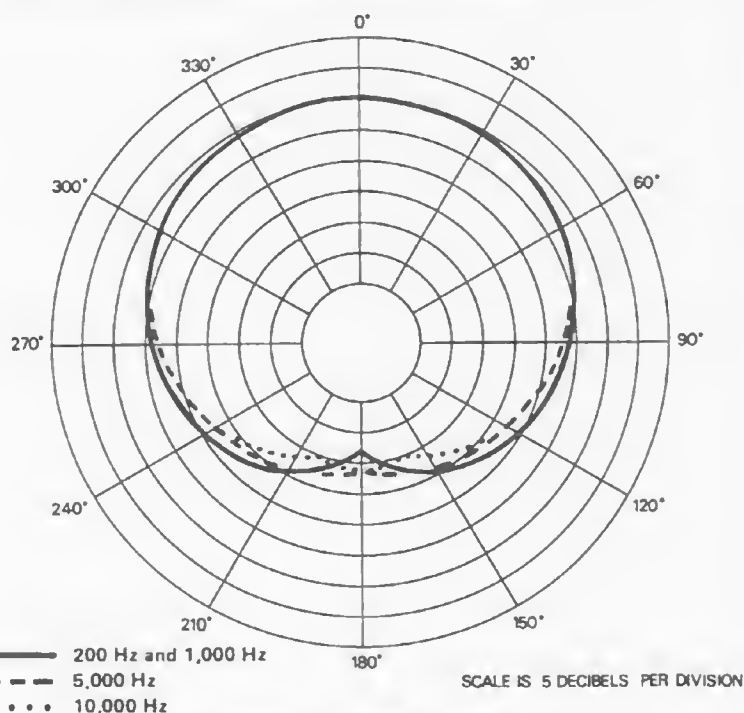


FIGURE 4 — Polar Response

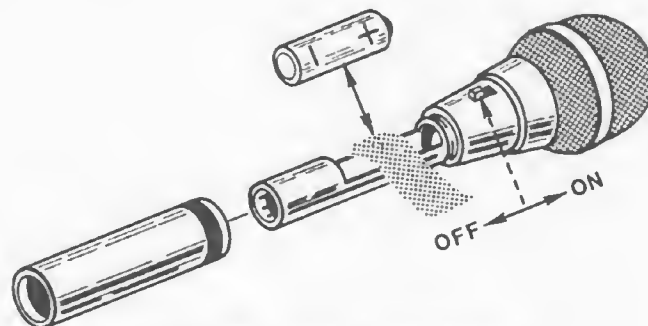


FIGURE 5 — Battery Replacement

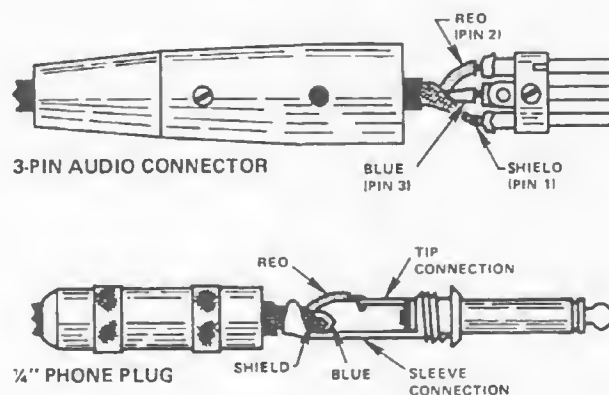


FIGURE 6 — 3-Pin Connector & 1/4" Phone Plug Wiring Connections

MAINTENANCE INSTRUCTIONS

You have purchased one of the finest electret condenser microphones available. A little care will allow you continued use of this precision instrument for many years. Your electret condenser microphone should not be left in the open sun or other hot environments where temperatures may approach or exceed 54.4° C (130° F) for any period of time. Following this suggestion will prolong the life of the generating element.

If you feel your unit is malfunctioning, have it examined and repaired only by an Electro-Voice authorized repair service station.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a Single-D cardioid electret condenser type with frequency response of 50 to 20,000 Hz.

The microphone shall have an 150-ohm balanced output, with an output level of -55 dB (0 dB = 1 mW/10 microbar), and EIA sensitivity rating of -148 dB. The microphone shall have an electret condenser generating element whose output shall not be appreciably affected by temperature extremes from -17.8° C (0° F) to 54.4° C (130° F) and/or by humidity extremes. An on/off switch shall be provided. LC suffix on model number denotes microphone less cable. A 4.6 m (15 ft), two-conductor shielded, brown, rubber-jacketed cable with Switchcraft A3F connector installed at the microphone end shall be provided.

The case shall be zinc diecast with an aluminum battery compartment cover. The finish will be non-reflecting gray paint. Dimensions shall be 190.5 mm (7.50 inches) long, with shank diameter of 25.4 mm (1.00 inch). Net weight including battery, but less cable) shall be 343 grams (12 ozs). The Electro-Voice Model 301 stand adapter shall be furnished.

The Electro-Voice Model 1776B is specified.

WARRANTY (Limited)

Electro-Voice Commercial/Concert Series Microphones are guaranteed for two years from date of original purchase against defects in workmanship and materials. If such malfunction occurs, microphone will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For repair information and service locations, please write: Service Dept., Electro-Voice, Inc., 600 Cecil St., Buchanan, Michigan 49107 (Phone: 616/695-6831) or Electro-Voice West, 8234 Doe Ave., P. O. Box 3297, Visalia, CA 93277 (Phone: 209/651-7777).

Electro-Voice also maintains complete facilities for non-warranty service of EV products.

Specifications subject to change without notice.